Théorie des Langages, TD n°

* Automates à pile *

2) $\mathcal{L}_2 = \{ a^n b^n , n \in \mathbb{N} \}$

$G = \{$ $T = \{a, b\}$

$N = \{mot\}$

$S = mot$

$P = \{$ $mot \longrightarrow a\ mot\ b$

$mot \longrightarrow \varepsilon$

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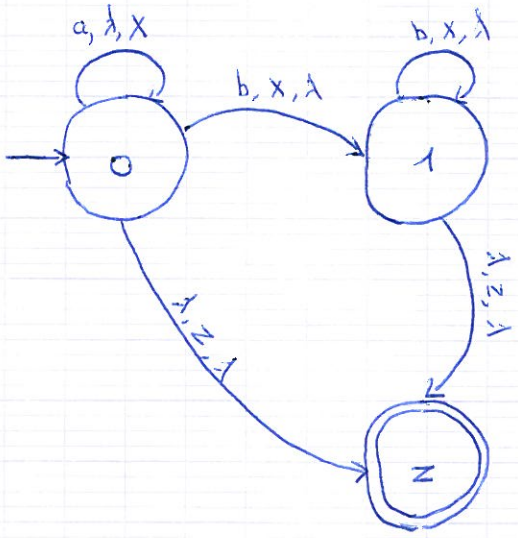

3) $L_3 = \{ a^m b^p \ , \ (m,p) \in \mathbb{N}^2 \ , \ m > p \}$

$G = \{ \ T = \{a, b\}$

$N = \{ mot , tmp \}$

$S = mot$

$P = \{ \quad mot \longrightarrow a \quad tmp$

$tmp \longrightarrow a \ tmp \ b \mid a \ tmp \mid \varepsilon$

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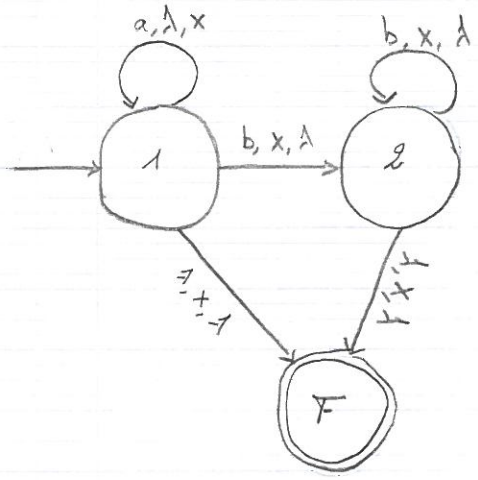
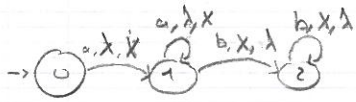




4) $L_4 = \{ a^m b^p, \ (m,p) \in \mathbb{N}^2 \ / \ m \neq p \}$

$G = \{ \ T = \{a, b\}$

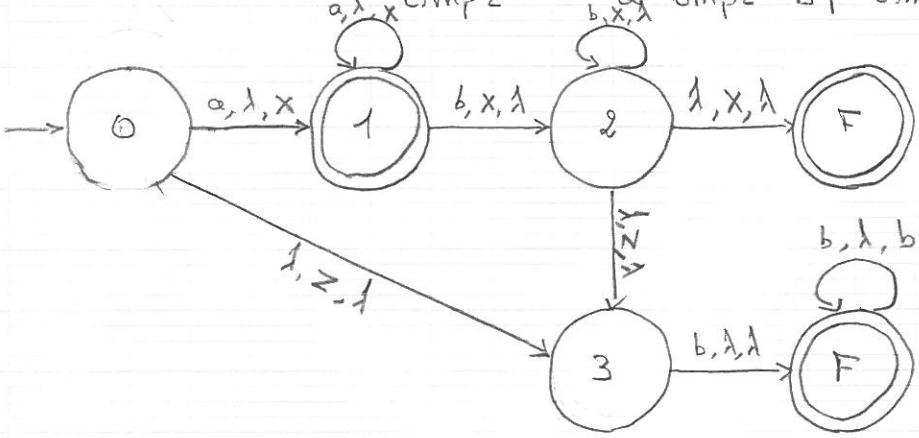
$N = \{ mot , \ tmp1 , \ tmp2 \}$

$S = mot$

$P = \{ \quad mot \longrightarrow a \ tmp1 \mid tmp2 \ b .$

$tmp1 \longrightarrow a \ tmp1 \ b \mid a \ tmp1 \mid \varepsilon$

$tmp2 \longrightarrow a \ tmp2 \ b \mid tmp2 \ b \mid \varepsilon .$



5) $L_5 = \{ a^n b^* c^m d^* \} \cup \{ a^* b^m c^* d^m \}$ avec $n \geq 0$.

$G = \{$ $T = \{a, b, c, d\}$

$N = \{ mot$

$S = mot$

$P = \{$ $mot \longrightarrow a\ tmp1\ c\ tmpd \mid tmpa\ b\ tmp2\ d$

$tmp1 \longrightarrow a\ tmp1\ c \mid tmpb$

$tmpb \longrightarrow b\ tmpb \mid \varepsilon.$

$tmpd \longrightarrow d\ tmpd \mid \varepsilon.$

$tmpa \longrightarrow a\ tmpa \mid \varepsilon.$

$tmp2 \longrightarrow b\ tmp2\ d \mid tmpc$

$tmpc \longrightarrow c\ tmpc \mid \varepsilon.$

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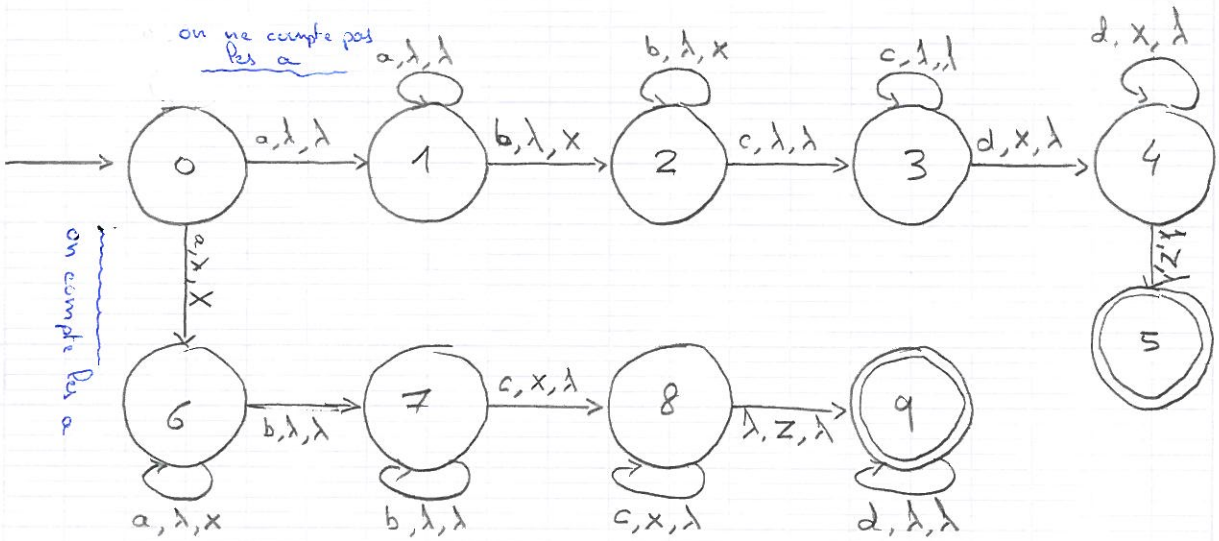

6) $L_6 = \{ a^n b^p c^q \ / \ n, q, p \neq 0, \quad p \geq n+q \}$.

$G = \{ T = \{a, b, c\}$

$N = \{ mot, tmpb \}$

$S = mot$

$P = \{ \quad mot \longrightarrow a\ b\ mot \mid mot\ bc \mid b\ tmpb$

$tmpb \longrightarrow b\ tmpb \mid \varepsilon$

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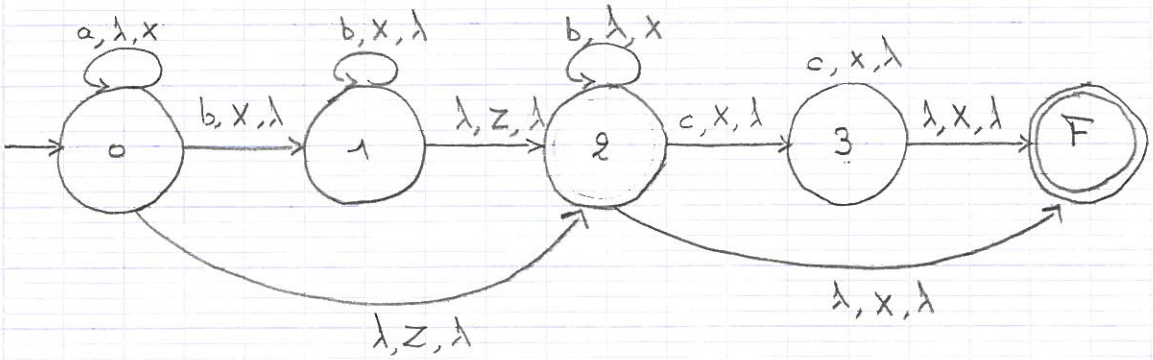

7) $L_7 = \{ a^n b^p \ / \ n \neq p+2 \}$

$G = \{ T = \{a, b\}$

$N = \{$

$S = mot$

$P = \{ \quad mot \longrightarrow a\ a\ a\ tmpab1$

$mot \longrightarrow a\ tmpab2 \mid tmpab2.$

$tmpab1 \longrightarrow a\ tmpab1\ b \mid a\ tmpab1. \mid \varepsilon$

$tmpab2 \longrightarrow a\ tmpab2\ b \mid tmpab2\ b \mid \varepsilon$

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